> Claim Rejections under 35 USC§102

> Response to Final Rejection Arguments

1. Claim Rejections 35 USC § 102

Regarding the claim 1-18 rejection based on anticipation by Brush, II et al, (US 5,732,232), and hereafter referred to as Brush;

In general, Brush discloses a method to map a point on a plane to a face representing emotions for display whereas '433 discloses mapping software entity to face glyph set representing emotive content. Furthermore, '433 discloses a software entity comprising an emotive vector and it's utility in conveying emotive content, display being only an interface characteristic. While both convey emotive state and intensity, the Brush discloses a point or scalar mapping to an infinite set and '433 discloses a emotive vector entity mapping to a finite set of face representations.

Also, in general, emotive vector or emovectors is a term coined by the applicant. Emovectors are defined and specific within the application. Prior art does not use this term nor does prior art impliedly or inherently teach this data structure. In computer applications, emovectors are a software entity, see '433 pg. 20, which have at least two distinct quantities, 1) an emotive state from a set of discrete emotive states and 2) an associated emotive intensity, from a range of values normalized to the author/sender of the emotion.

Regarding '433 **Claim 1**: Brush col. 3 line 38-48 teaches a user interface to "display a likeness of a face on a display device .. by positioning the features of the face

in various ways, the face can be used to represent and display human emotions" While Brush discloses a form of emotive content in face graphics, Brush does not teach or disclose **emovectors**, the emotive content method and entity disclosed in '433. An emovector is an A) emotive state from a discrete set of emotive states, B) an associated but separate emotive intensity, C) normalized to a finite range of intensities, D) to the author, not a receivers subjective perception. Please note that a graphic representation is not in the definition of emovector, in distinction with Brush, where the graphic is the emotive content. The emovector carries the emotive content in a data entity, whereas in Brush, the point on a defined plane carries the emotive content. Moreover, Brush's emotive content is an emotive scalar entity, with the emotive state and emotive intensity merged into one object, represented by a point on an x-y plane. The emotive content is a scalar, because each point on a plane, position, maps to an emotion represented by a face graphic. The depiction of emotions through faces is not novel, however, representing facial features by one point are the novel characteristics of Brush. The Brush method allows for the generating of emotive content using a control point on a plane to define a face representing a combined emotive state and intensity, one quantity. The Brush face graphs representing emotions are distinguished from '433 because Brush A) combines emotive state and emotive intensity, not distinguishing each qualitatively and not separate quantities, B) not normalized to a numerical value in a finite range C) in proportion to some bounded relevant scale selected by the author/sender with indication that this is to represent the author/sender emotive intensity in that bounded scaled range, and D) a method to draw faces with emotions from a point position, not a software entity. Brush discloses, "user uses an indicator such as a mouse click or a pen tap to identify where in the *spectrum* of the *interpersonal model* the emotion to be represented lies" (col 4 lines 43-48). The "spectrum of the interpersonal model" referred to is a selection from the continuum of possible faces represented by points on a plane, not an author/senders subjective normalized range. Thus in Brush, the author/sender is constrained to the continuum of emotions allowed by the Brush model, not from a discrete set of emotive states. In Brush, authors are not allowed to transmit their own specific feelings, but a selection of face graphs, which depict emotions from a "spectrum of the interpersonal model". This refinement in granularity for facial expressions does not relate to the

author's personal subjective standard. This emotive content transmitted is then to be interpreted by the receiver, who is unable to normalize the content to the author because no normalizing parameters are present in Brush. Brush teaches face glyph representation of emotions but not in the form of emovectors. In an emovector an author/sender is required to introspect and select an state from an given finite set of states and also select an intensity value from author's own depths and experience, an emotive intensity numerical value from the authors own range of emotive intensity and on a bounded scale, not in accordance with some interpersonal model from 0 to infinity, as in Brush.

'433 claims are based on emotive vectors, defined in the '433 specification and which have nothing in common with Brush. Although face glyph representations long predate Brush, the distinction in Brush is the method to do this with one control point representation of a unique face. By distinction '433 discloses the software objects emovectors and their use, not a graphical representation or method of producing face glyphs depicting emotions. Moreover, the graphical representations are ancillary in '433, which deals mostly with the encoding, decoding, transmission, compiling and parsing of software objects or structures called emovectors. Brush discloses a method to draw faces and therefore implies software objects and data structures for graphing such. Brush lacks any enablement or expression as to how the graphical information in the form of emotive content is structured for encoding, decoding, parsing, compiling or transmission. This absence of expression in Brush specification implies that nothing is novel in his encoding, decoding, parsing, compiling or transmission and therefore one skilled in the art may put Brush emotive content into practice without any such explanations. The most one can infer from Brush is that the software data structures encoding, decoding, and transmitting are point selected on an x-y plane, thus points and axes. This is distinguished from an emovector, software entity or data structure not known, not prior art and not used at Brush file date and to this day.

Another distinguishing characteristic of '433 is that the emotive content generated, sent and received allows the receiver to know the author/senders emotive state and emotive intensity, precisely and numerically subjective to the author, without

inference by the receiver, while the emotive content generated in Brush, although selected by the author choosing an x-y position, must still be interpreted by the receiver as to its relationship to the author/sender's emotions, and an inference must be drawn or a guess made by the receiver as to the author/sender's emotive state and emotive intensity based on the authors experience. This cannot be done from the Brush emotive content for the several reasons cited above and distinguished with '433. Moreover, there is no way to relate the author/sender's emotional state to the continuum of possible states available except in some vague approximate sense as interpreted by a receiver. A guess must be made from the receiver's standpoint, looking at the graphical depiction, in attempting to ascertain the author/sender's true intended emotive intensity and its numerical value subjective and normalized to the author/sender. This forms the crux of encoding, decoding, transmitting, parsing and compiling emotive content in '433; the interpretation of the emotive intensity is not required by the receiver and hence need not be receiver inferential because the emovector carries the precise intended author/sender emotive state and associated author/sender normalized emotive intensity value. Furthermore, emovectors are not a graphically based software entity, having no dimensions from any particular axis, nor geometrically constrained by or depending on a spatial position.

The reference in Brush to "the greater the distance from the origin of the grid the greater the degree of expressed emotion" (col 4: lines 47-52) gives no limitation or boundary to the degree of expressed emotion. In contradistinction, '433 discloses the limits as the authors scales themselves. In Brush, the emotive intensity can impliedly increase forever since Brush discloses, "The ranges actually used in the preferred embodiment are negative to positive emotion on the x-axis and aggressiveness to passiveness on the y-axis" (col 4: lines 37-40). In contradistinction to '433, emotive intensity is not "negative" or "positive" or unbounded as taught in Brush. The ranges referred to in Brush are unbounded areas of the x-y plane continuum, defined by a "interpersonal model" and an inherent part of the Brush method to map x-y points to a continuum of faces representations. In contradistinction, the ranges referred to in '433 are author subjective, not in accordance with a point on a plane, and not for the purposes of mapping to a continuum of unique faces. The '433 range values are bounded and

within a scale, not "negative" or "positive" on an unbounded axis and from a discrete set of emotive states. Brush emotive content are not normalized to anything, much less an author subjective scale as in '433.

In Brush, the x-y position mapping to emotion representations are selected by an author in the hopes that the face will somehow represent the authors combined emotion and emotional intensity. However, this hope and author's intent are easily thwarted because observer/receiver must infer from inspection of the graphic, as to what that emotive state and emotive intensity are both qualitatively, emotion, and quantitatively, intensity. Thus the emotive content in Brush is distinguished from '433. Since the face representations are unbounded both **objectively** in Brush, "the greater the distance the higher the intensity ..." and **subjectively**, no author relationship to range, the receiver must interpret the emotional content. In contradistinction, '433 disclose that there are boundaries to degrees of intensity, that these boundaries are author specific, author selected and that these are represented by author's personal numerical ranges. Hence with emovectors there is no need of interpretation by the receiver, as to emotion or intensity, as these are quantities asserted by the author and preserved by the emovector. Moreover, '433 emotive vectors are more than a graphical representation because they are software objects containing 1) separate emotive state emotive intensity values, not merged like in Brush, and 2) the intensity is normalized to an author's subjective scale, not an unbounded "spectrum" as in Brush. Contained in emovectors are author emotive intensity selected from author personal experience and in accordance with his/her personal range and to scale. In that there is no inference to be made on the part of the observer/receiver, the observer need not guess from a graphical depiction, what the author's personal intensity is regarding author's emotive state. This is distinguished from the x-y point data structure disclosed in Brush representative of the emotive content within a point on a plane or in a face representation.

Regarding '433 **Claim 2**: Brush col. 4 lines 1-6 describes a method of **encoding** emotive content through facial expression representation by way of positioning facial features. In contradistinction, '433 claims encoding of emovector software objects, not

encoding of emotions inherent in the face representation or the method of drawing face representations for encoding of emotive content. Furthermore, the '433 encoding is into data objects in standard computing device communication formats, not a method of unique graphics manipulation from a x-y point on a plane. While the Brush method of creating faces inherently encodes graphical facial expressions, Brush teaches nothing of encoding data objects resembling emovectors into a specific formats or datastreams. Moreover Brush does not disclose encoding emotive content into communication formats, standards or data streams except as done in prior art. Brush "expression of control dimension by way of representing positioning of the eyes and eye brows", col 4 lines 1-6, encodes emotions into graphic expressions through manipulation of the facial features of the graphic representation. The encoding of Brush is done via and inherent to a circumplex theory method, evidenced because the decoding is done by inspection by a viewer. This is distinguished from encoding carried via a data structure object, which is explicit and receiver/observer independent. Brush can be practiced without using any communication formats or standards and Brush explicitly discloses nothing of doing so, implying that Brush contemplates using the existing methods of encoding emotive content by face representation known to one skilled in the art at the time. Emovectors were not used or known to those skilled in the art at Brush file time. Furthermore, the encoding of facial feature representation showing emotions, not emovectors, were taught and practiced prior Brush. By implication, Brush teaches a known method of encoding emotive content, encoding the position of a point on an x-y plane with associated axes in a datastream, not encoding of emovectors into a datastream using communication standards and formats.

Regarding '433 **Claim 3**: Brush col. 4 lines 12-17 discloses **encoding into text**, that the previous "text only" user interface was limiting in emotive content, and that Brush remedies by allowing "emotions can be graphically displayed *by* the characters to add depth to the communications experience." Indeed characters "by" the text helps to convey some emotive content but is only positional in nature, "by", which is still imprecise since the receiver must guess as to which text is associated with the "character". Is it the word on the left or right of the character, or is the character

subtending the fragment, sentence or paragraph preceding or succeeding the character? Obviously the emotive content immediately adjacent to text is impliedly associated, but how far the positional association to the adjacent text should extend is left to a receiver's guess. '433 is distinguished because the text is directly coupled with the emotive character, that its character position placement also retains its text association subtending the entire string(s) selected by the author, which can therefore be displayed on demand or otherwise processed. Brush does not encode with text in this manner and neither does prior art. '433 discloses that the association is selected by author/sender, and that the association is not strictly positional, and contains any size string(s) of text selected. This is so taught in '433 because an emotion's manifested words or text are also "owned" by the author/sender and should not be inferred by the receiver. Without a clear coupling of text to character, the positional placement of the character is not sufficiently defined and the receiver must guess to ascertain the emotion associated text. This is the prior art from which Brush relies. This is distinguished by emovectors with direct reference to an entire string(s) of text in encoding, not associational placement within a text display without direct reference to a selected text string(s).

Evidence that prior art does not encode emotive content with text or in standardized format text streams is Microsoft bid for patent application 20050156873 by Walter, Bettina ; et al. on July 21, 2005 titled **Custom Emoticons**. "Methods and devices for creating and transferring custom emoticons allow a user to adopt an arbitrary image as an emoticon, which can then be represented by a character sequence in real-time communication. In one implementation, custom emoticons can be included in a message and transmitted to a receiver in the message" indicates that it is currently not done. This would also apply to transmission and decoding standards and formats.

Regarding '433 **Claim 4**: Brush col. 4 lines 50-56 discloses a method of **decoding** by which an author/sender can control the degree of anger and aggressiveness on a display device through the positioning of a point on a plane, manipulating facial features to depict negative emotions such as Anger and degrees of negative emotions. Author "control" implies encoding, not decoding. Moreover, the decoding in Brush is made by

receiver/viewer inspection of the face emotion representative. This inspection and decoding is made subjective to the receiver/observer, not programmably as distinguished in '433. '433 allows the decoding to be made programmably because the author selected and transmitted information in the emovector allows decoding to present this emotive content information to the receiver/observer on demand, textually or graphically, '433 pg 25, 40, 41 and FIG 8.

Moreover in Brush, the author/sender cannot normalize the face graphic to any range or scale as the emotive content data structure in Brush is a point entity, merging state and intensity into one, a scalar. In Brush, the author/sender can encode his emotion but is limited in the continuum of faces possible through the face feature representation. Thus the degrees of graphic image expression are the extent of encoding possible by circumplex or other algorithm applied in Brush. A Brush receiver can only decode from the face graphic information sent, and therefore is limited in decoding the graphic representation, forcing the receiver to interpret the emotional intensity from an infinite number of expressions, and not from any normalized author/sender range or scale, but from the extent of the graphics facial feature geography such as "mouth curvature or brow angle". Since emotions are more than facial feature depictions, Brush is insufficient for decoding emotive vector information. This is in distinction with '433 claim 4 which claims decoding of emotional content in electronic communications bearing emotive vectors normalized to the communication's author, thus the decoding of direct author given information about the emotive state and intensity relative to the author, not a guess to be made by the receiver. '433 teaches nothing about decoding from the facial representation, but decoding of emovectors as defined, emotive states named by the author and associated emotive intensity quantified by and normalized to the author/sender.

Brush implies decoding using the subjective inspection of the receiver, "the resulting user interface **reaction** is that the facial representation depicts a mouth intensely frowning to indicate the negative emotion ..", (col 4: lines 52-54). Moreover in the decoding, Brush teaches the position of a point in an x-y plane controls the "degree of

negative emotion", etc. In contradistinction, '433 teaches nothing of positive or negative emotions which are not only unnecessary, but not useful, as they require the receiver to make an inference to ascertain emotional intensity, something taught against in '433. Also, the Brush method forces the receiver to make inferences to degree and intensity in decoding emotive content, '433 provides that information by author selection.

Regarding '433 **claim 5**: Brush col. 5 lines 13-17 reserves the right to create graphical display of faces across different faces; human, animal and inanimate, a computer network devices, and applications; games, commerce. Since Brush graphic representation of emotive content can be accomplished without **tokenization**, and no mention or implication is made of tokens or parsers or compilers, tokens cannot be assumed as necessary to put Brush into practice by one skilled in the art unless it was commonly done by those skilled in the art, not the case. Since this is not the case, Brush cannot be credited to disclose the parsing of emotive content into tokens. If by some stretch an inference can be made that Brush discloses parsing of emotive content into tokens, those tokens are not emotive vectors or software objects which can be assembled into emotive vectors, as the fundamental information contained in emotive vectors is absent in Brush emotive content, as shown above, leaving Brush with the receiver subjective decoding by inspection, and receiver judgments to ascertain emotive intensity from face feature geometry.

Furthermore, '433 tokens do not contain a position, or a point from a continuum of emotions based on a pointing device on an x-y plane nor an algorithm to decipher geometry from a point position. Hence tokenization of emovectors in '433 is not contemplated or disclosed by Brush, and the Brush disclosure " it can be implemented in the use of interactive games, interactive commerce and display environments" does not necessitate or indicate in any sense that Brush graphic representations must be implemented with tokens in order to be displayed on computing devices, as those applications cited by Brush do not nor does the state of the art.

Regarding '433 **claim 6**: Brush col. 4 lines 23-30 discloses "display of specific emotions, happiness, sadness, surprise.." but also "user means to specify emotion in 1) finer gradations and 2) a range of intensity" than the prior art. The operative word is "display." Since Brush emotive content does not **reference text**, and at best, it can only be inferred that Brush means to embed his "emotion index point" somewhere within text, as prior art currently does, positionally. Since the Brush emotive intensity and state are merged into a graphic character, and text bears no relationship to the emotive content save by a positional placement, Brush could not tokenize emotive vectors or tokenize with text strings. Moreover, Brush emotive content does not directly reference text, but is merely embedded positionally within the text, Brush could not tokenize emotive content with text except positionally. The deficiency that is it a guess as to what text the Brush emotive character subtends. This leaves the text subtended by the Brush emotive content character indeterminate, subject to interpretation by the receiver. By contradistinction in '433, the emotive content associated text string(s) are directly referenced as selected by the author, leaving no guessing to the receiver and the tokenization of emotive content with associated text possible.

Although many different kinds of compilers exist, Tokanization of emotive vectors is not disclosed in the art nor explicitly or implicitly disclosed in Brush. '433 discloses tokenizing emotive content with the parts of speech of associated text as part of it's data structure. Brush does not disclose a data structure but implies points on a grid. Brush does not directly disclose associated text with emotive characters, only impliedly and that by positional placement of characters within text, as that is the current method used and not novel. Brush does not disclose tokens, not tokenization of emovectors nor can Brush tokenize text with Brush emotive content tokens in the datastream because of lack of data structure reference to text strings, only a positional placement within a text stream. While tokenization of emotive content with text is possible, Brush only claims "giving a computer user a means to specify emotions in 1) much finer gradations and 2) a range of intensity" for "allowing **display** of specific emotions." The display of specific emotions does not necessitate tokenization in association with text. Since Brush does not explicitly state tokenization or tokenization with text strings and one skilled in the art

would not be confined to use tokens in putting Brush to practice. Brush does not disclose tokenization of emotive content in general through invocation of prior art practice of graphs with text, nor does Brush disclose the tokenization of emovectors.

'433 **claim 7**: Brush col. 4 lines 57-62 discloses mapping from points from an area "center left portion of the interpersonal relationship continuum" to positioning the eyes on the display "indicating that it is not aggressive, not yet passive, it reflects a middle ground on the control continuum" There is no **numeric** scheme or discrete range mapping to **emotive intensity** described, only some abstract relationship from a point continuum to the placement of facial features which may be interpreted in a fashion as "an intense positive emotion such as happiness". How much "happiness" is the emotive intensity not given by Brush, in contradistinction with '433 which discloses author may have intended the graphic face as "angry", "mildly angry", "somewhat angry", "very angry" or "extremely angry" and provides the software entity with the appropriate text string mapping to numerical value of intensity associated with the authors "happiness" state.

A bridge between text string word qualifiers and a numerical scale is shown in '433 Table 1 and defines a bounded range and scale for the emotive intensity, so that viewer/receiver can map the emotive intensity from text to numerical value programmably, not abstractly, approximately, or subjectively. Brush's use of "intense positive emotion" or "middle ground" does not map emotive intensity to text string qualifiers or to a numerical range. Clearly, because the text string qualifier is chosen by the author of a selected emotive content in accordance to author's own perception, the receiver does not make the judgment or assertion as to the value of the emotive intensity numerically or textually. Moreover, '433 discloses that the intensity of the emotive state is normalized to the author, not the receiver. Brush discloses that the receiver of emotive content discerns the author's emotive intensity based on the facial feature placement on the emotive content. Furthermore, that emotive intensity is unbounded, arising from a continuum of "the greater the distance from the origin of the grid, the greater the intensity of the emotion." (col. 4: lines 47-49), in distinction with '433 where

the author/sender determines the numerical value or emotive text qualifier describing the emotive intensity, and in a bounded range.

Moreover, the emotive intensity described in Brush FIG. 3 preferred embodiment as "intense positive emotion" stems from a receivers determination based on inspecting the graphical representation of a authors selected face. What ever the authors intention is, this must be interpreted as "negative" or "positive" by the observer/receiver. That is not a numerical mapping of intensity to text. '433 does not teach or claim positive or negative emotive states or intensities. '433 discloses emotive states existing in a set of emotive states with defined names, **not** as Brush teaches a continuum of graphics that the sender must create depicting an emotive state that is not explicitly named, but may "reflect an intense positive emotion such as happiness, etc".

Furthermore, Brush's disclosure does not create a numerical mapping from an x-y point to an **emotive state**, leaving the interpretation for the receiver as in FIG. 3. In FIG. 3 the receiver is notified to interpret the face as angry, whereas because of the Brush lack of state identification, selection by point location only, the receivers interpretation of the **face graphic can be mapped to many** emotive **states** such as disappointed, hostile, discouraged, sad, envious, leery, miserable, stubborn, suspicious, determined, surly, outraged, etc, even though the author may have intended the graphic face as "angry". There is no designated structure in the Brush point to transmit the name of the emotive state, hence the viewer must interpret subjectively as to the selectors "desired emotion". Hence Brush emotive content is approximate and in identifying the emotive state in the emotive content, 1) leaving it up to the receiver to guess the author's intended emotive state and 2) not giving the author the facility to name the graphic state explicitly. In distinction with '433 which explicitly allows the author to select his identified emotive state, and the numerical value of his emotive intensity in accordance with the authors personal normalized scale.

'433 **claim 8**: Brush II col. 3 lines 27-36 discloses selection of "an emotion and it's intensity by clicking the computer's pointing device with a mouse button on any point

in a two dimensional graph representation .. with the **face being updated** to reflect the **new emotional state**". The method of graphing faces with emotive expression from graphic primitives does not require **scanning** or tokenization, as text and language constructs are not a part of point to face-feature mapping algorithm. '433 claims scanning and tokenizing of the embedded emovector emotive content in the communications, not graphical representations, not pointing devices, x-y positions on a two dimensional plane within a circle or any other such graphic primitive and Brush does not disclose manipulation of text strings requiring compilers, scanners, parsers or any other software artiface requiring tokenization. As noted above, the emovector object contains a A) name emotive state, not a receivers guess as to what that state is from viewing a perfectly symmetrical computer generated face, B) an emotive intensity, a separate numerical value representing meaning relative to the author, not a numerical distance of a facial feature to an axis and C) a value normalized to the authors scale, not a number from a range divided by 0 to infinity, the Brush range of values. Furthermore, in Brush, graphical representations are not textual communications, and graphical displays of faces representations are not tokens in a communication stream. Scanning a communication stream may be inferred if one skilled in the art of scanning text streams scanned for points. Since scanning is not explicitly or implicitly disclosed in Brush and communication of the Brush position points on an x-y axes did not use scanners by those skilled in the art, Brush does not disclose scanning and tokenizing of emotive content in general. Brush alludes to the use of his faces within dialog text streams but fails to elaborate on how that would be implemented, implying that conventional skilled in the art means would be used. Since emovectors were not yet scanned and tokenized by those skilled in the art, Brush cannot be disclosing that scanning for emovectors.

'433 **claim 9**: Brush col. 5 lines 1-7 disclose an "alternative means of representing" emotions by graphical representation superimposed on an "emotion control grid" by a pointing device, varying degree of "positive" emotion by moving the control point away from the 0 axis etc., or placed in some quadrant of the grid. Varying the degree of positive or negative emotion by manipulating facial features does not change the fact that in Brush the emotive state and intensities are merged into one entity, that one

entity a position, controls the facial features of a graphic in accordance with that points position, mapping from a single point to a graphic depiction of an emotion, state and intensity combined. Thus the Brush emotive content **data entity transmitted** is a **point**, a position, an x-y coordinate, **not text data or tokens** for text. A parser is not disclosed explicitly. A parser is not disclosed impliedly by reference because Brush is manipulating facial features, not text or text constructs. Point data transmits Brush emotive content. In distinction, '433 claims parsing communications containing the emotive content using emotive grammar productions to tokenize the emotive content in textual communications. A parser reads tokens, necessary in '433 because emovectors contain text labels. Brush discloses no tokanization, much less a grammar or productions for processing these non-disclosed tokens. Even though Brush teaches that the application can be web based, one skilled in the art, 1996, would not have used grammars and productions in implementing a web based Brush as it would have added complexity not justified for its use. Currently, emotive content is not processed in any fashion other than with the primitives enabled by typical network languages. Moreover, emotive content grammars and productions could not have been processing emovectors, since they still do not exist in the market place. Furthermore, even textual communications using grammar productions referred to under Brush do not use grammars and productions in implementation of any emotive content contemplated by Brush.

'433 **claim 10**: Brush col. 4 lines 22-41 disclose to "produce many more faces with much finer detail in the display of the emotion." Brush further discloses a method to "give the computer user to means specify emotion in 1) finer gradations and range of intensity." The means to "specify emotion" is all in the context of producing **graphics** of **faces** with continuum of various emotional intensities. In distinction, '433 does not teach or claim any particular method to display any particular emotion or intensity graphically. Brush discloses " invention for manipulating a human face to represent emotion." '433 does not dynamically manipulate a human face to represent emotion, using fixed manual drawn graphics for display. '433 discloses emotion **via labels, text and numerical values** in the emotive content **software object**. Moreover, where and when displayed, '433 emotion display graphics are manually drawn face glyphs, not computer generated,

also distinguished from Brush, disclosing computer generated emotive face graphics. '433 does not preclude that emotions can be generated by various computer graphical means, but does not claim any method of so doing as disclosed by Brush. The fact that Brush allows the "computer user" to select the face to represent an emotion does not change the fact that the viewer/receiver must infer what that emotion and emotive intensity are. As stated above, the generated graphic is **not normalized** to the user creating the graphic because the users personal range or scale is not used in Brush. Moreover, in Brush the user's selection is constrained to "a spectrum of the interpersonal model of emotion represented by Circumplex", not a personal user scale or range. At best, Brush can be described as using an arbitrary scale, zero to infinity, ""the greater the distance from the origin the greater the intensity of the expressed emotion" col 4: lines 47-48, and consequently values of intensity from different users will mean different emotions, even thought the users make the selection of the same point it cannot be normalized with infinite range and no personal scale.

'433 disclosed encoding of vectors normalized to the author. As shown above, Brush does not disclose vectors, but scalar emotive content. Moreover, normalization is not in found in Brush. Normalization allows that similar values from different events can be compared on similar scales for indicating roughly the same quantity. Thus through a common scale relevant to each individual, normalized intensity values indicating roughly the same value from disparate users will indicate similar intensities as applied to each individual. Brush allows for authors to select a face representing their emotive content from an infinite possible number of choices. These cannot be compared or related to the authors by receivers of the emotive content in any normalized sense, since there is no basis for comparison, no reference scale binding each author to any point. '433 discloses a users range, from the user's highest intensity being one end of the scale and the user's lowest intensity being the other end of the scale. In this way, the receiver/observer need not guess or infer an intensity of the sender/author by inspecting a graphic character selected by a sender as in Brush. '433 teaches that the receiver understands that relative to the senders individual scale from lowest to highest, the sender's intensity is some numerical value on this sender defined personalized scale. Brush does not disclose

personal scales or individual ranges of any kind. In Brush the emotion is a combination of intensity and state selected from a "spectrum" or continuum bounded by 0 on one end and infinity on the other, hence unbounded. Since the Brush is unbounded, even the intensity/state emotion cannot be normalized in even some arbitrary sense.

Regarding '433 **claim 11**: Brush FIG. 1 defines "the ranges actually used in the preferred circumplex theory, the Ranges actually used are negative to positive emotions on the x-axis and aggressiveness to passiveness on the y-axis .. in the purely theoretical model", col 4: lines 37-41. This is a structuring of graphical facial features with respect to a negative-positive emotions axis and aggressiveness to passiveness y-axis. This does not require text processing, text tokenizing, parsing of tokens or productions in processing tokens and none is even alluded to in Brush. FIG. 1 in Brush depicts emotions as graphical output from face feature primitives manipulation which map a point position to a graphic, on axes defined as more or less negative verses more or less aggressive. The graphics manipulation of faces by one skilled in the art does not disclose or necessitate a parser, since that is unnecessary to map the emotions from a point graphically as done in prior art. Furthermore, if there was a parser, it would not be parsing emovectors for the above mentioned reasons.

Brush FIG 4 depicts a graphical representation of "devilish grin" by placement of the control indicator in the "lower right hand quadrant." This "devilish grin" is an interpretation made by the observer and which in Brush "devilish grin" can represent a variety of emotions, emotive states or emotive intensities. In contradistinction, in '433 the sender names the emotion and intensity separately, and the receiver does not make the interpretation as to what those are. The emotive state name and intensity value is carried in the software entity, which a parser can encode, tokenize, parse, etc. The Brush FIG. 1 and 4 do not explicitly or implicitly disclose structuring and synthesizing emotive parsers with productions exploiting emotive vectors encoded in textual datastreams. Parsers read tokens and assemble those tokens into language constructs. Brush's figures depict graphic primatives, faces, which have no need for language constructs. Indeed, text can be augmented by Brush faces, but tokenization is unnecessary, adding a complexity to

Brush not justified by one skilled in the art. Parsers receive tokens, which are comprised of sequences of text characters. Brush is not passing text characters to paint faces, only x-y point data, converting that to a graphic face. There is no need for Brush to convert x-y data to tokens for language constructs in so that they can be plotted. Indeed Brush mentions emotions can be graphically displayed by the characters to add depth." (col. 4: lines 20-20). That is the current practice of all graphics with text and Brush only offers a "finer intensity or range" for making these graphics, not a parser for language constructs. This is in contradistinction to '433, where emotive objects do not have x-y position information for a graphic representation with text, but a data entity which can be used for language constructs for use in defining sender/author's emotive intent, meaning or motivation.

Productions or production rules are used to describe a grammar. The grammar is a structure that defines the relationships of various language constructs. Brush does not disclose language constructs, relationships between various language constructs, or grammar of any kind. The state of the art mentioned does not disclose language constructs, relationships between various language constructs, or grammar of any kind regarding emovectors or even graphics of emotive content. Thus there is no evidence of tokens, parsing or productions in Brush and an inference so drawn will exceed the scope of one skilled in the art for doing this, as there is no impetus and makes no economic sense. This also is in contradistinction with '433, where productions are explicitly defined and contain language constructs with emotive content for a described grammar. This approach allows the emotive content to be manipulated with parts of speech language constructs to derive more language constructs and text, than can be simply interpreted or inferred by the receiver/reader observing graphics between text.

Regarding '433 **claim 12-16**: Responses can be found in paragraphs responding to claims 1-11 above respectively, distinguished from Brush because Brush does not disclose emotive vectors but emotive scalars. Furthermore, the Brush emotive scalars do not associate text in communications with which they are embedded.

'433 claim 17 and 18: Brush col. 4 lines 13-41 discloses a method of creating faces graphically to represent emotions in 3-D, using VRML, as well as 2-D, using JAVA. Additionally Brush discloses VRML and chat applications, which are networked. These applications exchange graphics representing emotions along with text streams. The prior art applications cited in Brush embed graphics with text positionally. This in contradistinction with '433 which discloses emotive content which is associated with user text strings, text that is **user selected** to be **associated referentially with** the emotive content, the text selection by author which is subtended or colored by the emotive content, not merely a positional placement in the proximity of text by author which leaves the observer/receiver not knowing the entire extend of the text associated with the emotive graphic. As shown in prior art, positional placement of emotive graphic characters is not sufficient for applications to parse the data steam in a meaningful way, since the receiver cannot make the association with text from positional placement without guessing. This adds to the imprecision of Brush emotive content and method. Therefore, although Brush refers to prior art applications, conveying emotive content over a network, Brush offers nothing new to these networked applications in associating emotive content with user text. Moreover, Brush does not disclose or anticipate emotive vectors in text, only emotive scalars defining emotional face representations.

Brush col. 5 lines 20-25 claim "a method for controlling the **display** of emotions .. on a **computer generated** face". While an application internal programming may engage in encoding, decoding, parsing, compiling, emotive data structures or manipulation of graphics with associated text strings are different from displaying the end product, "computer generated face". Brush x-y points on a grid are mapped to and displayed face graphics, these are not emotive vector software objects mapped to face glyph representations from a library. Furthermore a method to "display of emotions" is not claimed in '433 and disclosed peripherally in an embodiment as manual **hand drawn**, not computer generated faces.

Brush col 5 lines 4-43, claims a "method of emotion display .. based on interpersonal relationships". This "encoding" of emotive content by Brush is in the

graphic representations, not emotive vectors in a datastream as software objects or data structures in standard transmission formats, but as points on a defined grid.

Brush col 6 lines 13-20, claims "means for selecting a point on the x-y plane to indicate the desired emotion". Thus Brush allows the sender to select points to indicate the desired emotion. This emotion is in the context of a Brush a merging of emotive state and emotive intensity into a graphic representation by sender. The emotive intensity is carried in the facial features, not in some numeric scheme. The intensity is not normalized to the sender, but must be interpreted by the viewer/receiver from an unbounded set of intensities. Hence the "desired emotion" transmitted in Brush is imprecise, leaving the viewer with interpretation of face representation of an emotion, encoded transmitted and decoded as a scalar value, "a user selected point", not an emovector.

Although Brush discloses an application which is networked, Brush does not disclose a computer network used in assembling, encoding, transmitting, parsing emotive vectors or manipulating text with emotive content, only creation and transmission of graphic face representations of emotion graphic representatives placed with text streams. The Brush method has no need for user text manipulation with emotive content, nor does Brush disclose user to select text to be associated with emotive content. Brush does not disclose emotive vectors, emotive vectors associated with user text, assembling, encoding, transmitting, parsing, or mapping emotive vectors and text with face glyphs from a set of face glyphs.

2. Rebuttal to Response

The section above also contains an indirect rebuttal to the issues presented by the examiner, as on page of applicant's response:

Regarding page 2 applicant states Brush does not teach "emotive content into standard device communication formats or face display", referring to transmission in standard communication formats. Brush teaches "the selection of the point being translated into appropriate value for the dimension of the emotion .." that manipulation of the point location affects the "dimension of emotion in proportion to the point's position .." for "**updating**", repainting the face, to "reflect the **new emotional state**". This is understood by applicant as speaking to emotion transitions, "updating to reflect the new emotional state", by moving a point's position. A transmission format or standard to effect this update is not stated, so we must assume one skilled in the art. Since Brush teaches graphic characters, then an inference of transmission would be as graphic characters are transmitted at the time of Brush file. In Brush, transmission of emotive content is not an issue directly addressed, therefore the Brush transmission standard and format implementation over a network would be as by one skilled in the art. The inference to be drawn is that Brush is teaching graphics transmission with text positionally located within standard text communication formats, since that is the method used by those skilled in the art, for which there was no named standard for transmission of emotive content with text.

The Brush method uses circumplex theory to draw faces, allowing "selection of the point being translated into the appropriate value of dimension of the emotion .." which speaks to the placement of facial features in painting the face representation, not encoding emotive content software objects into datastreams. How Brush faces are being transmitted is not addressed, we can only infer that it is transmitted by virtue of being a networked application. Current art does not couple emotive content with text in more than a positional way in the text stream, evidence that the emotive content is nothing more than positional placed in the text without any standards format and therefore in distinction to '433. This is also evidenced by the fact that Brush emotive content transmission needs no text selection by user. The result of this is that in Brush the receiver is burdened with determining the author intended text association with the emotive content and must rely only on the position of the face in the text or box. Moreover, because the receiver must make inferences as to what the emotive state is and

what the emotive intensity is, this makes the positionally placed text that much more imprecise, as the interpretation of the receiver may associate what ever text is subjectively appropriate in the receiver's view. This is distinguished in '433 which discloses a UNICODE, XML, ASCII and other transmission standard formats, page 20-25 of the application, for the transmission of emotive content and specifically emovectors, in standard transmission formats, wherein the emovectors are referentially associated with user selected text.

Regarding applicants page 2, Brush does not teach "selected emotive state/intensity form from a set of emotive state in device communication". Brush teaches a form of selection of emotive states merged with emotive intensities. Thus a Brush user can select point which maps to a face representing an emotion with **both** state and intensity together. This Brush selection from an infinite possible face representations from a continuum of possible combined state/intensity emotions is distinguished from a '433 user selection of emotive state from a finite set of emotive states, and an independent selection of emotive intensity from the user's personal scale, not from a continuum or distance from x or y axis, but a separate selection of emotive intensity having a separate intensity value within a bounded range, associated with each emotive state, not a merged state-intensity with an unbounded intensity value. Moreover, the selection of merged emotions allowed in Brush leaves senders/authors free to choose from an infinite set of emotions which precludes a standard set which all users can know and which can promote agreement on any one face graph representation per labeled emotive state. The Brush method promotes an individual free expression by all users, "an emotion by way of positioning the eyes and eye brow and the expression of the Affiliation dimension by way of representing the positioning of the mouth," which makes interpretation by receivers, without any set known and agreed representations, free to decide which face representation will correspond with which emotion, as there are no set boundaries between emotions nor agreement to a standard face emotion set. This is in distinction with '433 which teaches a discrete set of emotive states from a library or a set of emotive states, which allows discrete graphics depictions, not necessarily facial

representations, to represent emotive states and associated but independently selected bounded emotive intensities from a personalized, normal to author/sender, range of emotive intensities.

Regarding applicants page 3 on encoding of emotive content in view of Brush's "user interface reaction to indicate the negative emotion ..", col 4: lines 50-56, please see applicants "regarding claim 10. Encoding of emotions is different from encoding emotive content and specifically encoding emovectors. Brush encode emotions into faces, even degrees of emotions merged with intensities. These are distinguished from encoding into a datastream. The proof lies on the ultimate use or utility of this emotive content. Encoding negative and positive emotions is as Brush admits a "user interface reaction .." to the graphic representation. This is imprecise, forcing the viewer to guess the sender/authors emotions, distinguished from '433 which does not encode positive and negative emotions or teach such a thing. A further illustration of this is in Brush, the author's selection depicting "a mouth intensely frowning" does not "indicate the negative emotion" if selected by author/sender in '433, as the author in '433 may be attempting to color the text in ways to make the indication "positive", for example a face with a frown showing determination, accompanied by text relating to a hope that the author wishes to convey, not as taught in Brush, a frown indicative of a negative emotion.. This is a deficiency with Brush emotive content and distinguished by '433.

Regarding applicants page 3 on "normalization of emotive intensity" please see previous "regarding claims 1, 4, 5, 7, 8, 10 and 11 on normalization. In view of Brush FIG. 3 and face graphics representing happy, negative, positive, etc. emotions. This as discussed above is not normalization of emotive intensity, as normalization requires some measure against which there is a comparison, not taught in Brush because selection of emotions comes from a infinite boundless continuum of possible choices, from 0 to infinity, from an "eye brow angle", a "distance between eyes", a "positioning for the mouth, "the greater the distance from the origin of the grid the greater the intensity" etc" An author normalization from this approach is not possible because the choices are infinite, not bounded defining the authors highest and lowest emotive intensities for

comparison with the sent graphic. Furthermore, Brush does not disclose an author personalized range or scale for normalizing of emotive intensity, therefore Brush cannot be normalized to author individually. Brush teaches "the greater the distance from the origin of the grid, the greater is the intensity of the expressed emotion", meaning the more pronounced the facial features toward happy-sad or aggressive-passive. This approach has no boundary, "the greater the distance the greater the intensity", no scale, not personalized to the individual, limited to degrees of happy-sad or aggressive-passive. In contradistinction to '433 which is bounded, lowest to hightest author intensity, scaled from an example 1-10 range, personalized to the individual, author's intensity to author's scale and range, not limited to an axis from degrees of happy-sad vs. aggressive-passive.

Regarding applicants page 4 on stating Brush does not disclose "parsing the emotive content into tokens.. for presentation" As discussed in above in claims 5, 6, 7, 8, 9 and 10 above, tokens are ascii characters assembled into tokens for language constructs by parsers. Brush discloses "computer program .. means for displaying computer generated faces ....means for controlling the display of emotions ". Brush's means discribe graphic primitives for painting faces, not ascii characters, for language constructs. Therefore Brush does not parse for emotive content into tokens for language constructs. Indeed, text can be augmented by Brush faces, but tokenization is unnecessary to do this and not expressed in Brush. Parsers receive tokens, which are comprised of sequences of text characters. Brush is not passing text characters to paint faces, only x-y point data, and provides a programmable means of converting points on a grid to graphic faces representing emotions. There is no need for Brush to convert x-y data to tokens for language constructs in so that they can be plotted. However, Brush mentions emotions can be graphically displayed by the characters to add depth." (col. 4: lines 20-20). That is the current practice of all emoticons with text applications and Brush only offers a "finer intensity or range" for making these graphics, not a parser for language constructs. This is in contradistinction to '433, where emotive objects do not have x-y position information for a graphic representation with text, but a data entity, which can be used for language constructs for parsing emotive content coupled with text,

for use in text string manipulation with actual tokens and language constructs, language requiring grammars, for using sender/author's emotive intent, meaning or motivation in language using the emotive content. This is distinguished from the prior art, which Brush calls the "advanced metaphor for communications" which only carry the graphic emotive content representations positionally along with the text, requiring the reader/receiver to decipher the emotive content subjectively because there is no explicit reference to the text. This "advanced metaphor" allows for "display of specific emotions" but not as emovectors. Emotive vectors have additional properties referencing the specific text strings for manipulation of emotive content with the text.

If any matters can be resolved by telephone, Applicant requests that the Patent and Trademark Office call the Applicant at the telephone number listed below.

Respectfully submitted,

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